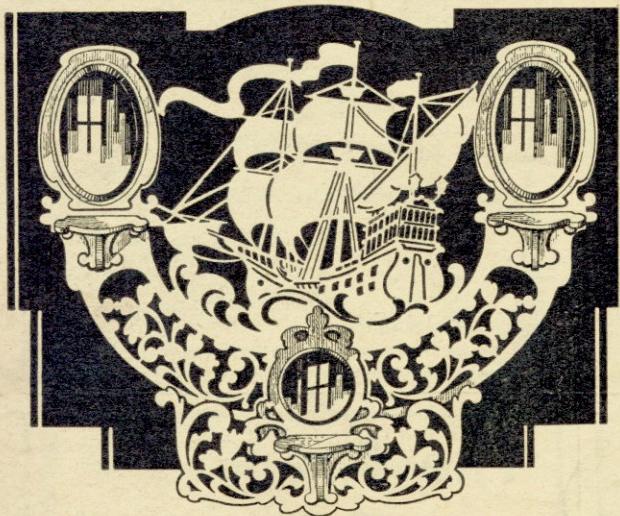


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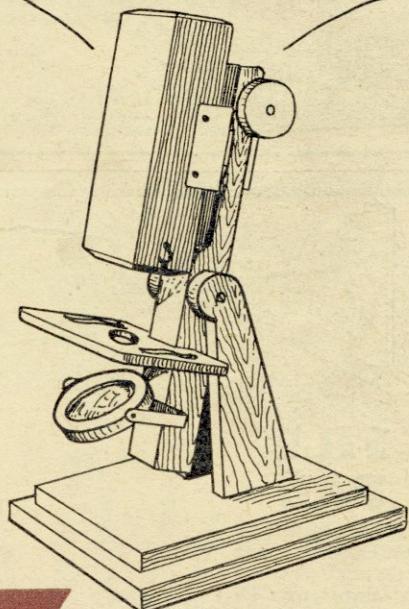


THE GALLEON
WALL BRACKET
FRETWORK DESIGN

February 5th, 1938

2^d

Vol. 85. No. 2207



THE FRETWORKER'S AND
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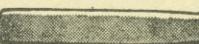
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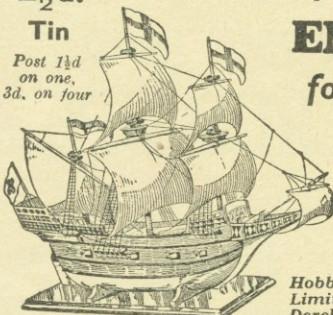
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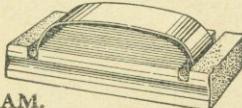
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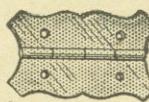


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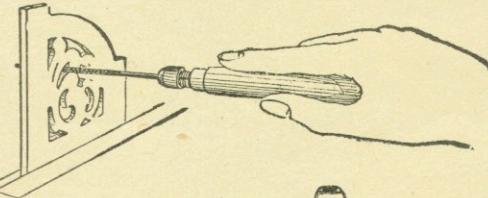


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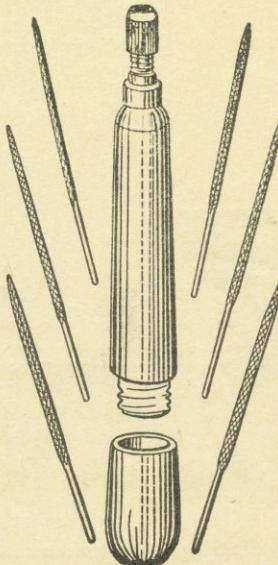
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Hobbies

WEEKLY



February 5th. 1938

Vol. 85. No. 2207

"GALLEON" WALL BRACKET

THIS week's gift design is an excellent example of real fretwork, and accordingly will appeal to a large number of our readers, both at home and overseas. It consists of a splendid representation of a galleon in full sail as its main motif, and is made useful by the addition of three little mirrors and a corresponding number of small shelves.

It is not, however, as would appear at first sight, all in one flat plane. The lower portion where the circular mirror and bracket are, is a distinct piece, and is actually glued to the front of the main part. Thus it serves to break the surface of the rest of the work, and at the same time adds distinction to the whole design.

Alternative Styles

A piece of work such as this, too, will provide an opportunity of several alternatives if the worker prefers.

First of all, the galleon design may appeal very strongly as a distinct design on its own. The ship in the picture is 8ins. wide and 7ins. high, and may well be used as an overlay or an ornament for another piece of work. For instance, it would be an excellent decorative panel to a cupboard door or to the front of a wireless or gramophone cabinet.

If cut in some distinctive fretwood it can be stained and polished with a highly decorative effect. Or, if you are an artist, you can colour the galleon correctly and shade up its billowing sails, its flying pennant, its gold and blue stern windows, lamps, etc.

In this connection, by the way, the Hobbies transfer No. 5295 (price 6d.) is exceedingly popular and shows a similar style of boat in colour, which

can be more or less copied from the actual transfer.

The galleon portion of the design will want altering along the bottom, and the imitation wave effect must be introduced into the outline of the wood something after the manner shown in the black and white detail on the next page.

A Smaller Article

Here is another alternative which may suggest itself to the busy worker. The completed wall ornament is 12ins. high and 14ins. wide, but if this happens to be too large or to involve more work than you can undertake at the moment, the design can be altered and the height reduced to 10ins.

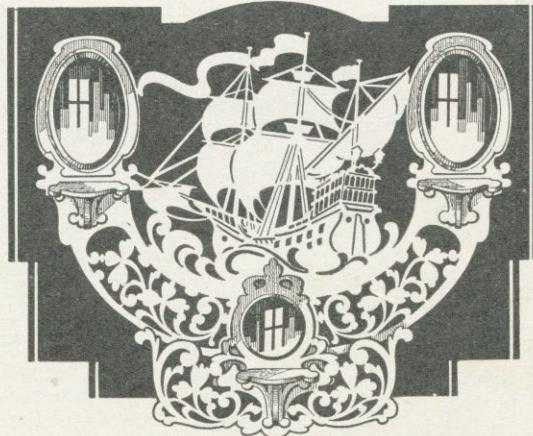
This can be done by omitting the middle overlay which—as before mentioned—hangs below the main framework. Thus you would have an ornament completed from the pattern shown at the righthand side of the design sheet, and instead of a large overlay there, the only portion which would be required would be that holding the mirror in place.

So far as the actual work is concerned, everything is quite straightforward. As usual, care has to be taken to follow through the scrolls and leaves of the design pattern.

One must also be careful to keep the straight lines of the masts, spars, rigging, etc. of the boat. Here again, one can make it

more realistic by cutting away the actual wooden portions representing the rope altogether, and in their place putting thin brown or black twine.

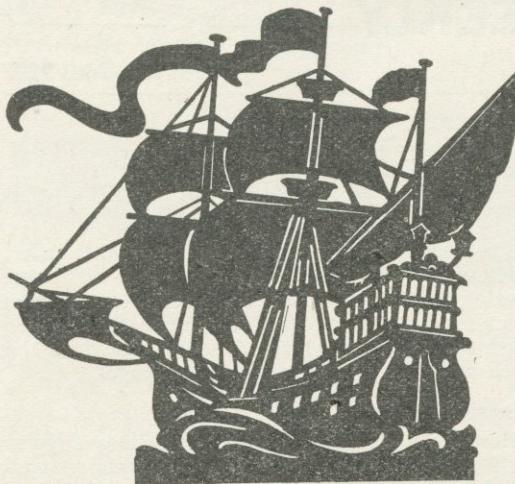
Notice, too, the small openings of the cabin windows and the square ports on the side. All these must be in alignment with each other, and any little errors made by the fretsaw must be



taken away by the judicious use of the small fretwork files.

The two upright elliptical mirrors are fitted to the top of the outer arms. An opening is made for them in the main piece, but you will be well advised to cut this last in order to keep the wood as solid as possible.

The oval must be large enough to take the mirror supplied by Hobbies. It is held in place



How to use the galleon patterns as a solo piece

at the front by a narrow rim overlay, the inner edge of which is chamfered carefully as shown by the section.

Holding the Mirror

The lower overlay in the middle contains more actual fretwork, but when it has been completed and cleaned up, that too is glued on to the back to serve as a holding for the mirror in the front.

In each case, the mirror is prevented from falling out at the back by means of photo clips, or a piece of stiff brown paper after the recess has been filled with thin board or cardboard, or even folded paper cut the same shape as the mirror.

Fancy Shelf

Beneath each mirror there is a tiny ornamental shelf, and the design of this is in keeping with the rest of the work.

Each complete bracket consists of four pieces. The main piece is the flat horizontal shelf itself, and three of these are cut with the grain running from back to front. Notice the tenon at A, B and C and secure a good fit to the corresponding mortise. To hold the shelf portion flat, a right-angle bracket or support piece is added beneath it projecting forward.

Glue this to the back as well as to the underside of the shelf as soon as you can after the latter has been fitted into its mortise.

Ornament Supports

Then, more as an ornamental piece than anything else, we add two little overlay pieces to

each shelf support. These lie flat on the back close up to the underside of the shelf, and to the upright support piece.

We give herewith a view of one of these completed brackets, looking upwards at it to show the various pieces just described.

If you wish further to ornament the completed work, you can add backing behind the semi-circular fretted portion under the galleon with a different kind of backing for the main overlay. In adding this, take care the glue is not put on too thickly or it will squeeze into the frets and show badly from the front.

Left and Right Hand

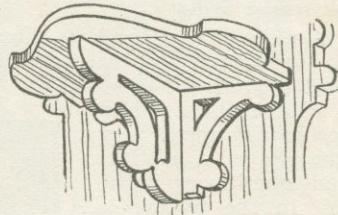
In any case, glue should be used thinly and applied to all parts where two are joined together. Thus the adhesive is put into the mortise and tenon joints of the shelves as well as along the straight edges of these parts.

Remember, too, there is a left and righthand ornamental piece beneath each of these shelves. Do not, therefore, lay them down and glue them haphazardly. Put one temporarily in place on each side of the work, then take it away and add the glue immediately. This ensures their being returned to the right place, and having the glue on the right side.

Fix the Glass

Another small point is that the glasses must not wobble about behind their overlays. Fill out the back so that the glass presses firmly to the overlay, then add the final backing as previously mentioned, to hold all firmly in place.

The whole thing can be hung by the addition of two little wall hangers one on each of the upper arms projecting above the top. Do not have the screws so long that they pierce the front.



An under view of the complete shelf

Or you can hang the whole thing by small nails in the wall engaging in the main opening just below the shelf on each side arm.

Details of the parcel of wood from which this work can be completed are given below, and the reader is strongly recommended to purchase it.

This material cuts out all further trouble in measuring and ordering because the boards are supplied of the requisite size and in the correct thickness. Each pattern can thus be pasted to its proper piece of wood without trouble.

MATERIALS SUPPLIED

FRETWOOD—For making the article, we supply a parcel of selected whitewood and dark overlay for 2/3, post free 2/9.

FITTINGS—Two bevelled oval mirrors (No. 5719), one mirror (No. 5704) a pair of brass hangers and sufficient linen cloth, 2/- per set, 2/4 post paid.

Complete parcel 4/9 post paid.

A HANDY ORNAMENTAL BOX

THE patterns on the centre pages of this issue provide full size details for making a handy little fancy box, suitable for a side-board or dressing table. It can be made quite easily with the fretsaw from a few odd pieces of wood, and we would recommend the use of satin walnut or mahogany. The thicknesses required are given with each part, and there is nothing greater than a $\frac{3}{8}$ in. board to be dealt with.

The patterns can be pasted down to their various pieces of wood, and of course, placed together as much as possible for the sake of economy. If you do not want to spoil the actual copy of Hobbies Weekly, trace off the parts carefully by means of tracing paper, or draw the outlines on to the wood direct with a piece of carbon paper and a sharp pencil.

Easily Made

The shape of the box is quite uncommon, and thus very attractive. It is provided with a three-tier base, a shaped container and a fancy lid. To each side is added an overlay, but if preferred this can be omitted and a coloured transfer added in its place.

The drawings on this page give full details of construction, and when the parts are cut out they should be put together as can be seen here. Notice before cleaning off the paper remains, how certain parts have to be shaped up along the edge to make a rounded curve instead of a flat surface.

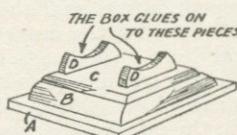
The Base Shape

The finished shaping can be seen in the details of the base and of the lid. The thick piece of the base, for instance, is curved off all round, and the centre piece of the three forming the lid is shaped in a similar way.

The three pieces A, B and C form the base, being glued centrally to each other with the grain running in the same direction right through. To



Cut away detail of the lid



The base and support pieces

the uppermost one (piece C) are added the two little shaped pieces to take the curve of the container itself.

Do not, however, glue these on until the box itself is constructed, because their actual width can be better tested in this way.

The box, as shown in the drawing, has two pieces to each side, one a little larger than the



other. The smaller one forms the surface round which is glued the outer casing.

This is composed of $1/16$ in. plywood $8\frac{1}{2}$ ins. long. Tack it at one end level with the flat top, then glue round the edge carrying it to the other end of the flat top. See the casing beds on nicely, and when the glue has set the temporary nails driven in can be withdrawn.

The Lid Parts

The detail of the lid shown in the drawing includes the framework which is really glued to the main box. The lid itself consists of pieces F, G, H, the frame E being glued on the top of the box itself. Cut out the piece E first, and shape its edges with glasspaper.

Then put a drill hole between the lines shown and cut round to get out the piece F. This piece is then glued under the lid piece G, and so forms a stop to prevent the whole thing sliding off when replaced on top of the box.

The small piece H is added above G, and finally the little round wooden knob (No. 15) put in the hole provided.

Support Pieces

Having tested the lid and the box and found them satisfactory, the latter is glued to the base by the two little pieces D previously cut. Stand the box in place, and put the support pieces so they just come inside the outer framework. Glue them to the top of the base and to the undersides of the box.

The overlay should be added, of course, before the box is put on to the base, as this will allow it to be handled easier and pressure put to hold the pieces together until the glue is set. The overlay should be cut from a contrasting wood of some kind so it stands out strongly from the sides.

If the whole thing is cut in fretwood it can be stained and brush polished.

Write for a free booklet on The Hobbies League

A HOME-MADE MICROSCOPE

FEW instruments can be more interesting than the microscope, with its wonderful power of revealing the mysteries of nature.

A drop of pond water, with its objects animate and inanimate, can be brought into view; an atom of mouldy cheese will reveal a menagerie of creatures, while the growing products of garden and hedge will, under power, show the most unexpected sights imaginable.

The microscope to be described is a really powerful instrument quite enough to suit any but, perhaps, a specialist. No difficulty should be experienced in making it, but the work should be carried out with care. All parts are lettered in Fig. 1 for easy reference.

The Bases

The upper base A is cut from $\frac{3}{8}$ in. wood to dimensions as in Fig. 2.

The lower base (not shown separately) is cut $\frac{1}{2}$ in. larger all round and both glued together.

The uprights B, are cut from $\frac{3}{8}$ in. thick wood to the shape given in Fig. 3. Cut the tenons to fit the mortises in A and bore the hole $\frac{1}{4}$ in. Glue the uprights in position.

The pillar C, consists of three pieces glued together. The outside pieces of $\frac{1}{4}$ in. wood and the middle of $\frac{3}{8}$ in. Cut the outsides to length and width given in Fig. 4, and bore the upper hole $\frac{3}{16}$ in. The middle piece has a section cut out, dividing it into two parts, shown shaded. Glue all three together.

The slot left is for accommodating the fine focussing arrangement. Where the arrow points, screw in a tiny hook, and bore the lower hole $\frac{1}{4}$ in. right through the lot. This hole is for the screw which will fix the pillar between the uprights in the base. Just below the lower hole cut the groove shown $\frac{1}{4}$ in. by $\frac{1}{4}$ in.; the stage fits in this.

The Carrier

The carrier D, has two lugs glued to it, the lugs working in the slot in pillar. Both carrier and lugs are shown grouped together in Fig. 5 and are cut from $\frac{3}{8}$ in. wood.

Top lug a is $1\frac{1}{2}$ in. by $\frac{1}{4}$ in., excluding the tenon, cut to fit in the mortise in D.

Bottom lug b is $1\frac{1}{2}$ in. by $\frac{1}{2}$ in., also excluding tenon. Glue both in and when the glue is hard, try the carrier in place. It is essential for the lugs to slide easily in the slot, and they must be well glasspapered until the movement is satisfactory. Where the arrow points to lug b, drive in a tiny screw hook.

In Fig. 1, E is a strip of $\frac{1}{4}$ in. wood $1\frac{1}{2}$ in. by $2\frac{1}{2}$ ins. It is fixed to the back edges of the lugs with screws to keep the carrier in place.

To effect an up and down movement [an eccentric disc is employed. This is shown in Fig. 8 and can be cut from $\frac{3}{8}$ in. wood, or be a slice off a $\frac{3}{8}$ in. dia. dowel rod. The $\frac{3}{16}$ in. hole is drilled out of centre, as shown, its edge in fact just touches the centre of the disc.

Where indicated by the arrow, drill a hole large enough for a $\frac{1}{4}$ in. screw to be pushed in with the thumb. Countersink this hole.

The spindle to which the disc will be fixed is a $\frac{1}{2}$ in. length of $\frac{3}{16}$ in. dowel rod. Slide the disc to the centre of spindle, insert a drill in the hole already boxed in the disc, and continue the hole half way into the spindle. This hole, however, should be smaller so that the screw can grip.

Fitting the Carrier

Glasspaper the disc smooth, slip into the slot, push the spindle through and fix disc to the spindle by the screw. Now place the carrier against the pillar, with its lugs partly in the slot, stretch a short piece of steel helical spring or strong elastic band between the hook in slot and hook on lower lug, and push the carrier right in, the disc being between the lugs.

Rescrew the piece E in position, and if the movement is free, as it should be, on twisting the spindle between the fingers, the carrier will move up and down. The length of travel is only $\frac{3}{16}$ in., but enough for fine focussing. All being right, cut two discs of $\frac{1}{8}$ in. wood, $1\frac{1}{2}$ ins. dia., bore a $\frac{3}{16}$ in. hole in the centre of each and glue one to each end of the spindle. Reference to detail, Fig. 9, shows the lugs in position and will help to make the foregoing clear.

The Stage

The stage F is a piece of $\frac{1}{4}$ in. wood, cut to size as in Fig. 6. The slot is $\frac{1}{4}$ in. by $\frac{3}{8}$ in., and the hole $\frac{3}{16}$ in. dia. The spring clips, shown dotted, are 2in. lengths of springy brass, $\frac{1}{4}$ in. wide. Fix with round-headed screws with a washer between spring and screw head, to press lightly on the stage.

Glue the stage to the pillar in the slot all ready cut for it, and underneath in the angle, glue a piece of triangular fillet as a support.

The mirror G is a convex one, $1\frac{1}{8}$ ins. dia. It is mounted on a disc of $\frac{1}{2}$ in. wood $1\frac{3}{8}$ ins. dia. by gluing thereto an overlay rim of thin fretwood. On opposite sides, $\frac{1}{2}$ in. screws are driven into the edge. Drive in half-way and cut off the heads. This will leave two pins for holding it in its clip and for swivelling.

The clip H is a length of thin sheet brass or tinplate, $\frac{3}{16}$ in. wide. Drill, cut and bend where shown in Fig. 7, and fix to the pillar below the stage by a single round-headed brass screw through the middle hole. Its correct position will be found by trial, as follows.

Fitting the Mirror

Lay across the stage under the springs a piece of thin white or tracing paper. Hold the mirror in its clip underneath tilted to 45 degrees, and move up and down with the fingers until a spot of light like a pea appears on the paper. Then fix the mirror clip with the screw, not so tightly, but that it can be moved round as required.

The microscope tube J is made of $\frac{1}{2}$ in. wood to measure 6ins. long and $1\frac{1}{2}$ ins. square. Two sides $\frac{1}{2}$ in. wide and top and bottom $1\frac{1}{2}$ ins. wide will effect this. Glue bottom and sides together, but screw the top on so that it can be removed when access to the lens for cleaning purposes may be necessary.

Other Lens Mounts

Fig. 12 shows the tube with top removed, revealing the lens mounts. L is the object lens, M the field lens, N the stop and O the eye lens.

The diameters and foci of the lens are given above in the next column, but it should be noted that the diameters are approximate. This is mentioned because if a lens of the diameter given is not in stock, another slightly smaller or larger can be substituted within the limits of the tube, of course.

The focus of the field and eye lens should be that stated, focus of the object lens can be $\frac{1}{2}$ in., $\frac{1}{2}$ in. or

$\frac{3}{16}$ in., according to the power desired, the last being the most powerful.

The sides of the tube should be grooved to receive the mounts of field lens and stop. Grooves for the former are $\frac{1}{2}$ in. wide and $1\frac{1}{16}$ in. deep;

WOOD REQUIRED

$1\frac{1}{16}$ in. thick, $3\frac{1}{2}$ ins. square; $\frac{1}{2}$ in. thick, 3ins. by 5ins.; $\frac{1}{2}$ in. thick, $7\frac{1}{2}$ ins. by 12ins.; $\frac{1}{2}$ in. thick, 10ins. by 13ins.; $3\frac{1}{16}$ in. dowel rod, 3ins.

LENS

Object lens. $5\frac{1}{16}$ in. dia. 1in., $\frac{1}{2}$ in. or $\frac{3}{16}$ in. focus.

Field lens. $\frac{1}{2}$ in. dia. 3in. focus.

Eye lens. $9\frac{1}{16}$ in. dia. 1in. focus.

Mirror. Convex. $1\frac{1}{8}$ ins. dia.

grooves for the latter can be simple saw kerfs $1\frac{1}{16}$ in. deep. The lens mounts are shown grouped together in Fig. 13.

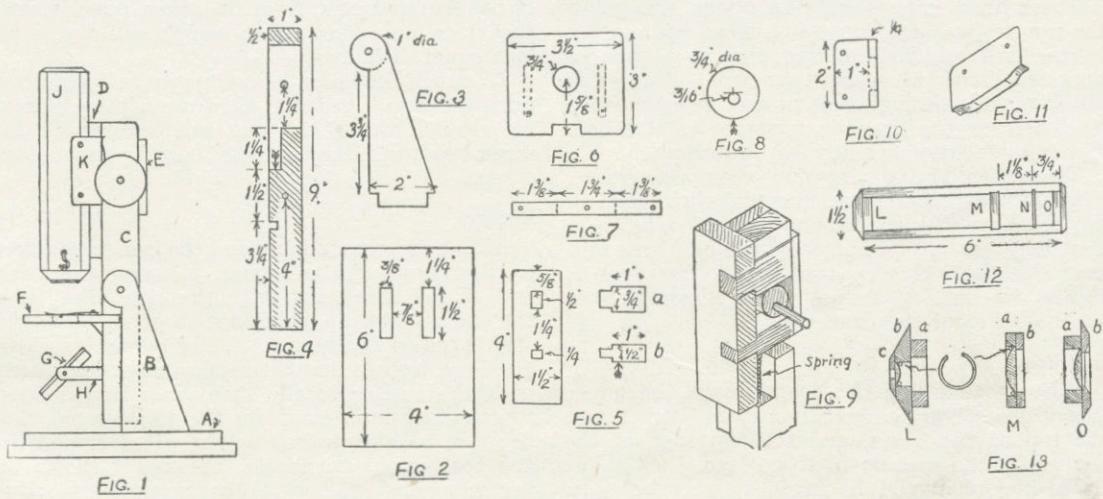
For object lens mount L, cut a 1in. square of $\frac{1}{2}$ in. wood a, and in the centre bore a $\frac{1}{2}$ in. hole; b is a $1\frac{1}{2}$ ins. square of $\frac{1}{2}$ in. wood, having a central hole the size of the lens; c is a $1\frac{1}{2}$ ins. square of $1\frac{1}{16}$ in. wood with a central hole of $\frac{1}{2}$ in. Glue these together and bevel the outer face.

Field lens mount M consists of two pieces of $\frac{1}{2}$ in. wood, measuring 1in. by $1\frac{1}{2}$ ins., glued together, the extra $\frac{1}{2}$ in. being for the grooves in the sides of tube. Bore a central hole in a the size of the lens, and a hole in b $1\frac{1}{16}$ in. smaller all round.

Mounting the Eye Lens

The eye lens mount O has a $\frac{1}{2}$ in. thick piece of wood $1\frac{1}{2}$ in. square (a) glued to a $1\frac{1}{2}$ ins. square (b) of $\frac{1}{2}$ in. wood. In the former a hole the size of the lens is bored, and in the latter one $1\frac{1}{16}$ in. smaller all round. Bevel the outside edges of this hole.

The stop N is a 1in. by $1\frac{1}{2}$ in. piece of $1\frac{1}{16}$ in. fretwood, or it can be a piece of tinplate. Bore a hole in it about $\frac{1}{2}$ less in diameter than the eye lens. Now stain the interior of the tube and the mounts dead black. The above details all read rather complicated, but are really simple to carry out. The point is that the greatest care must be



taken to get all the holes bored truly central in the mounts so that an imaginary line through the centre of object and eye lens will also pass through the centre of field lens and stop.

The lenses can now be fixed in their respective mounts by springy wire rings shown between L and M. Press the rings well down on to the lenses to keep them in place. Fix stop and field lens in their grooves and screw the top of tube over.

Movable Object Lens

The eye lens mount is fitted in and held in place by a small screw each side. The object lens mount is fitted to be removable at will, so that different powers may be used.

An easy way of accomplishing this is to drive in each side of *a* a small screw. Cut slots for these screws in the end of tube, push the mount in, and hold in place with hooks, as shown in Fig. 1.

To attach the microscope tube to carrier, cut out of thin brass or tinplate the slides K to dimensions given in Fig. 10. Turn up the narrow piece, slit it up the line, $\frac{1}{8}$ in. each end, and bend these slotted pieces upwards as in Fig. 11. Screw the slides to sides of tube and fix the latter so that the slides press behind the carrier D. The tube can then be slid up and down for coarse focussing. The pillar of the microscope is now fixed between the supports in base, and a brass screw bolt pushed through and tightened with a wing nut.

Suitable Finish

To finish the instrument, the brass metal parts can be polished and lacquered. The stage should be stained black and the stand black enamelled. The rest can be polished.

The Editor will inform any reader where he can obtain suitable lenses for this useful model.

How to make a TOBOGGAN

HERE are many forms of toboggans but here is one which may be made by anyone with ordinary mechanical genius. Take two boards, $\frac{3}{4}$ in. thick, 2 ft. 4 ins. long, and 4 ins. wide. Shape the ends as illustrated, then bore three holes in each runner with a three-quarter auger, and $\frac{3}{4}$ in. below the upper edge.

Bore the first hole 3 ins. from the rear top edge of the runner, the other 15 ins. front of that, and the third hole half way between the two. Next, just in front of the centre beam hole, cut a place for the hand to grasp the sled when coasting.

The Hand Holes

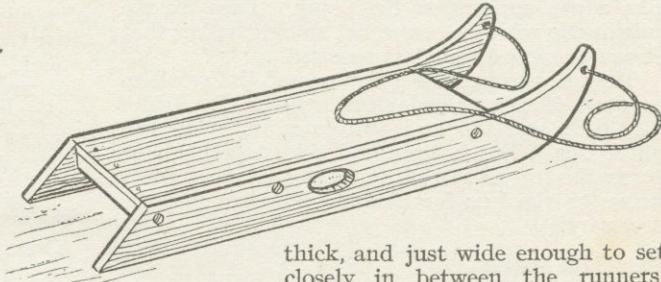
These hand holes should be about 1 in. below the upper edge, 4 ins. long, and $1\frac{1}{2}$ ins. wide in the centre, and rounded on the edge so as not to hurt the hand when hard pressed. Bore with $\frac{1}{2}$ in. bit a hole through each runner, near the front or point for the drawing rope to be attached. The runners are now ready for the beams.

These should be of hardwood, about 1 in. square. They should be cut 12 ins. long and shouldered to fit the augur holes so that they are 10 ins. between the shoulders. When fitted, drive all three into one side first, then put on the other runner. Fasten by putting a screw down through from the top edge of the runner.

Seat Board

When shouldering the beams, have the upper side with level surface so there may be $\frac{3}{8}$ in. between the top of the beam, and the top edge of the runner for the seat board to go into.

This board should be made 17 ins. long, $\frac{3}{4}$ in.



thick, and just wide enough to set closely in between the runners. Shape the ends as shown in the illustration and then screw down firmly to the beams. This sled will be found very substantial.

Iron Shoes

Larger or smaller sizes may of course be made according to the size of the person going to use it. Its durability may be considerably improved by putting on iron shoes.

To do this, get two pieces of three-quarter band iron 2 ft. 6 ins. long, and $\frac{1}{2}$ in. thick. Within $\frac{1}{2}$ in. of one end and 2 ins. from the other, punch holes, then two more 9 ins. apart, which will divide all into equal distances.

To punch the holes, heat the spot in your stove until the iron is red hot, then use a piece of saw file ground round, rim out and countersink for screw head, with home-made tools if you have no other.

Runners

After this preparation, bend the iron to conform to the curve of the runner, allowing the back end of the shoe, that with the hole 2 ins. from the end to turn up, so as not to catch when the sled is pulled backward. Fasten on with screws, $\frac{3}{8}$ in. long, but see that the heads are set down even with the surface of the shoe, or a little below.

You may now complete the job by painting the sled to any desired colour. Red is perhaps the best colour to choose, because it shows up better against the white background of snow.

BLACKBOARD & EASEL

A BLACKBOARD is a real useful present to give a youngster, if only for the encouragement it gives to sketching and drawing. Its use need by no means be confined to the kiddies, many an older person would find it handy for rough and ready designs, not to mention its use for photographic enlarging and for water and oil colour painting.

Ignoring the blackboard itself for a moment, the easel is quite a simple affair to construct.

Good quality deal, 1in. by 2ins. section, could be used throughout for making it and Fig. 1 gives some convenient dimensions, though it will be understood that these are by no means conservative. A larger easel for adult work only could easily be made.

The Tripod Easel

Cut the sides and trim the ends to the angle of 20 degrees shown. Near the bottom cut a groove across at 70 degrees angle and trim off the bottom to the same. These angles can be easily marked off with a protractor, such a useful and cheap instrument that every fellow should own one. Cut the grooves half the thickness of the wood.

Butt the ends together and glue, then to the back, glue and screw a 6in. long piece of wood, shown at A in Fig. 3.

Cut the edges of this piece level with the slope of the side pieces. Cut a length of wood for the cross rail, lay it across the sides, resting in the grooves, and run a pencil down the sides to mark

the slope on to the rail. Now halve the ends of the rail as in Fig. 2, and glue and nail across.

The back strut, B, is cut 3 ft. 6ins long and is hinged to A with a T hinge, as shown in Fig. 3.

Bore a small hole in the centre of the cross rail, and one in the strut to correspond, and connect both by a length of sash cord to prevent the strut slipping away when the easel is opened out.

The pegs, Fig. 4, are pieces of $\frac{1}{2}$ in. dowel rod. To each glue a circular disc of $\frac{1}{2}$ in. fretwood for a head, and drive in a screw eye. Fasten a length of whipcord to each peg to prevent them going astray. The free ends of the whipcord can be knotted to a second screw eye driven in a little lower down.

Several holes at equal distances apart are bored in the sides to receive the pegs. Space the holes as desired for personal convenience—no hard and fast rules needed for that.

The Blackboard

The blackboard is a rectangle of strong plywood, $\frac{1}{2}$ in. thick. Though not shown in the illustrations, the corners of the board might well be rounded off, the board looks neater and splintered edges are largely avoided. Many recipes are available for blackboard dressing.

Black Paint

For those who may not wish to trouble about making up a special one, the board can be treated to two or three coats of ordinary black paint. Allow ample time for each coat to harden before applying the next. The final coat should be rendered flat by rubbing with pumice powder on a felt pad or scouring over with a piece of well worn fine glasspaper.

On the other hand Hobbies Ltd. supply a special preparation ready to apply with a brush. It is 6d. a bottle and postage 3d. extra.

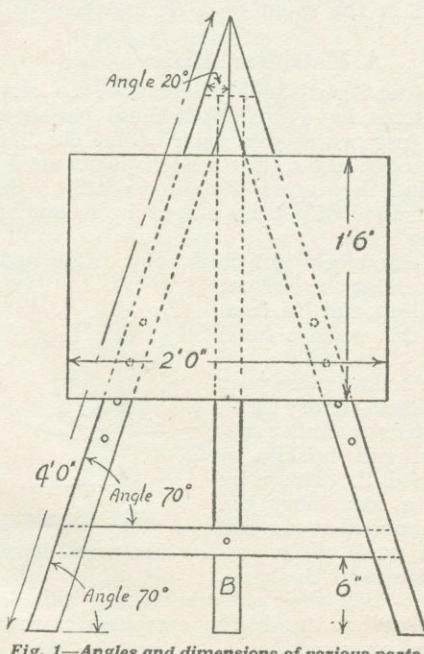
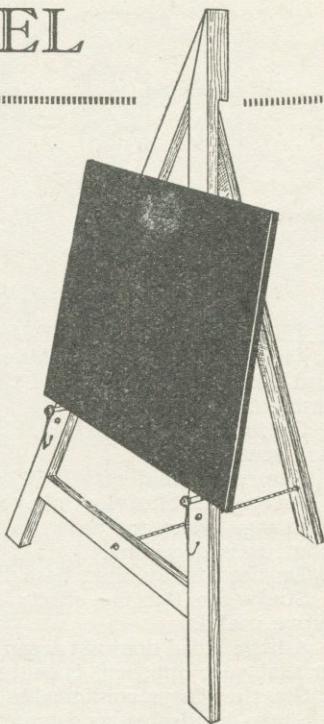


Fig. 1—Angles and dimensions of various parts

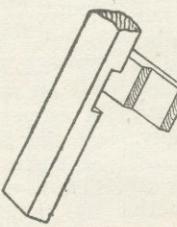


Fig. 2—The rail joint

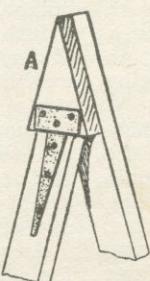


Fig. 3—The hinge

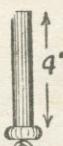


Fig. 4—The pegs



Scout Notes and News!



Boxing

HERE are a few final hints on the art of boxing which will conclude this series of paragraphs and I hope you have found them interesting and instructive.

Go in for plain boxing at first and don't try and stunt.

Remember that attack is better than defence.

An opponent heavier than yourself can soon tire.

Change your methods occasionally during a bout, it is deceiving.

Do not at any time be a bully.

Study the lighting effects beforehand it may prove useful.

A little blood does not mean that you are dying or that your opponent is beaten.

Get the gloves comfortable before starting.

Shake hands before commencing and finishing a bout.

Remember your Scout Laws they apply to boxing.

Scout Handicrafts Exhibition

I HAVE received a note from the Salisbury and South Wilts. Boy Scouts Association of an Exhibition of Scout Handicrafts to be held at Salisbury in March. There will be various sections of special interest to our readers but entries are confined to Rovers, Scouts and Cubs.

No doubt those who can enter, will, and a schedule of the various classes can be obtained from the Hon. Sec., 109 Fisherton Street, Salisbury. Please mention "Hobbies" when you apply.

We are always pleased to help Secretaries and others who run similar functions so let us know all about them as early as you can—at least a month if possible.

What to Look for

THE month of the great awakening this, with all nature stirring from its Winter sleep, Owls will begin to hoot, Thrushes will start to build and Rooks repair their nests for the courting season will have commenced.

The Lambs we left snugly in their Lambing yards last month will begin to frolic while the cold blooded reptiles will stir in ditch and pond.

Entomologists will get out their pins and killing bottles for early butterflies will be on the wing. And now is the time to hang up all the nesting boxes the troop has made during the Winter months. An exciting month. Good Scouting.

Birthday Greetings

TO the Chief Scout and the Chief Guide who celebrate their birthdays together on the same day; February 22nd, I am sure that all Scout Readers of Hobbies Weekly will want to join with me in wishing them long life and happiness.

It must be very gratifying to them both to watch year after year the growth and progress of the two movements of which they are so justly proud and we all hope that God will allow them to give us their guidance for many years to come.

The Editor has promised a special fretwork design to commemorate the event.

Competition

THE object here is to straighten out the animals names and write them in their regular order. Each one is a Patrol Animal. Send your list on a postcard to Scout Competition, Hobbies Weekly, Dereham, Norfolk, by February 12th, 1938.

- | | | |
|--------------|---------------|--------------|
| (1) Dullbog | (2) Peelthan | (3) Peeltoan |
| (4) Roangoak | (5) Moonsoge | (6) Thanpeas |
| (7) Boildraw | (8) Gillrotfa | (9) Fobfalu |

Example:—Unnepig would equal Penguin.

Now have a shot at this and get that Competition habit. Handsome prizes await successful entries and in the event of a tie, neatness will count.

A Matchless Affair

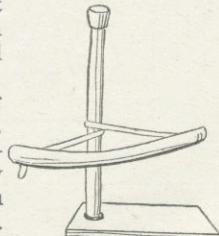
EVERY true Scout should never have to rely on matches for a fire. Sometimes the box is empty just when you want a match. At another time the new recruit has left them outside all night and they are too damp to strike. So here is a method of getting a light by means of the rubbing stick.

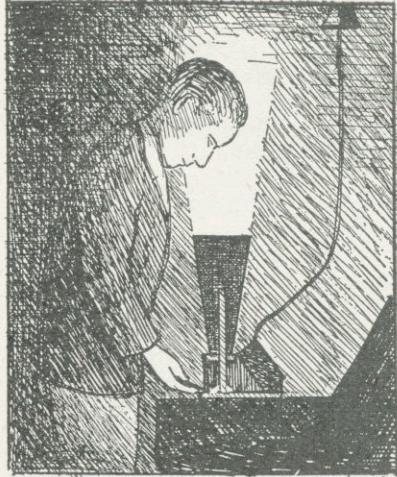
Get an elm block $\frac{1}{2}$ in. thick, 2ins. wide and 6ins. long. Near one end cut a slot $\frac{1}{2}$ in. deep, and $\frac{1}{2}$ in. from the end of this make a small hollow.

Into the hollow place your tinder, consisting of dry grass, wool horsehair or similar substance and rub briskly by means of a drill. This is an ash stick a foot long, $\frac{1}{2}$ in. thick and rounded at one end. There is a small socket at the other, metal lined and of a size to fit the hand.

Any bent stick with a leather thong will do for a bow. Work the drill in a rapid backward and forward movement.

The Skipper





*The second, and final portion of details on a novel and interesting instrument.
(See Hobbies of January 22nd.)*

WE now come to the base, uprights, lamp house and final assembly. The base is a rectangle of $\frac{1}{2}$ in. material 10ins. by 7ins. Pencil a centre line from the mid-points of the 10in. sides and draw another line at right-angles $2\frac{1}{2}$ ins. from one end. Their intersection gives the centre point of the lens, and to this the assembly should be made.

The two upright supports (h) are 11ins. long and $\frac{1}{2}$ in. by $\frac{1}{8}$ in. section. Attach the supports first to opposite sides of the block (c), 4ins. from the ends; see to it that the screws do not come right through to the centre circle in which slides the lens tube.

The Support Fixing

By 'trial and error' fitting, bevel the top of the supports to fit the sides of the truncated section. To fasten securely to the card, as screwing is out of the question, drill two holes (m), in the figure, then removing the top rectangle of card (b) insert a section of wire as (n) and press over the protruding ends over on the inside. This makes a very firm joint.

Next levelling off accurately the lower ends of the upright, secure to their baseboard with fine diameter inch screws from below, and the two angle pieces (p), $1\frac{1}{2}$ ins. by $1\frac{1}{8}$ ins., which are held by further inch screws from the base and one screw each driven in at an angle as (o).

At this juncture the top rectangle of ground-glass (b) should be finally fitted. The glass if correctly cut will lie just nicely on the ridge formed by the strips (a) and the rectangle border

A SELF-CONTAINED REFLECTOSCOPE

(b) fitting on top holds it firmly in place.

Should any packing be necessary to prevent looseness this can be effected by gluing a strip or strips of thin post card round the edge of the glass. The rectangle (b) is held in position by drapers pins pushed into the top edges of the walls, and the whole is finished as per side seams with strips of gummed paper.

The Lamp Holder

For the lamp-house procure a tin, bright inside, as near in dimensions as possible to 3ins. deep, 6ins. wide and 7ins. long. The lamp-house could be made out of a suitable sheet of tin if such a box cannot be obtained.

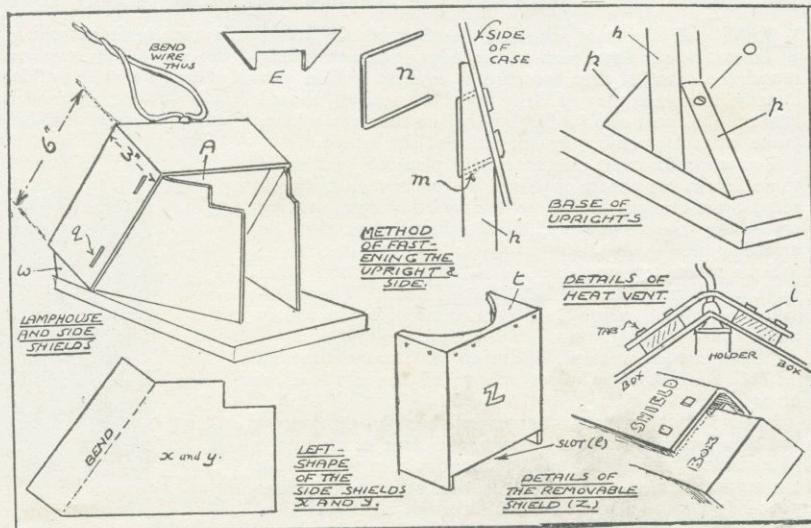
With a punch and file make a clean hole half way along a bottom seam (which, when the tin is in position will be the top) just large enough to take the apex of an ordinary sixpenny lamp-holder; this holder being held in position and the lamp suspended by dividing the two wires on the outside.

After placing the tin in position as shown, cut the two triangular wedges (w) and secure them to the tin from the inside by piercing two holes and inserting small screws in each. The angle of the tin should be so adjusted that its top lip agrees with the edge of the block (b).

Securing the Lamp-house

The lamp-house is permanently secured to the base by screws from the underside to the triangular blocks.

Now to fit the light shields x, y and z. These are pieces of stiff card and prevent any stray light



from escaping which would destroy the brilliancy of the image on the ground-glass. The sides x and y are shaped as indicated, the flap on the left fitting in the side of the lamp-house, while the right-hand edge lies tightly against the lens tube. The step on the upper edge is fit against and under the block (c). Its position must be found by trial, as it will differ slightly according to the precise dimensions of the lamp-house.

Fitting the Shields

One of the shields, either x or y is fitted permanently in position by a small sprig through to (c) at a point near the "step," and by two wire stitches as (q) made by piercing two holes in the tin and pushing a section of wire through shaped as for the uprights, and then bending the ends over.

The shield on the other side is only "sprung" into position. It will be found quite possible to do this by cutting the card to rather a tight fit at the lamp-house end and at the step. This side can be removed at will for insertion, taking out or changing of the bulb, as it might be inconvenient to have a bulb 'trapped' in the instrument all the time, with no way of getting at it.

The third shield (z) is loose-fitting and can be removed for focussing purposes and replaced when examining the pictures. The slot (r) at the bottom however makes it that once fine focus is obtained for a series of similar objects, stamps, etc., these can be slipped into position one after the other without the further removing of (z).

The shield (z) is made from a piece of card 4ins. by $7\frac{1}{2}$ ins. bent to right-angles at $2\frac{1}{4}$ ins. from either end and held thus by the section (t) cut to fit the lens tube and the square of the card. The two parts are secured again by pins and glue.

Model - Making in the Navy

HAVE you ever imagined what the Spanish Civil War means to our naval men on the ships of war patrolling round the coast of that unfortunate country? Can you imagine the monotony of daily routine exercises aboard ship off the coast of a foreign land where they can seldom make contact or enjoy the amenities of life ashore.

You can, however, imagine what pleasure and relief those fellows can obtain on board if they have a fretwork set. How it can get them happily busy below deck, making something they know will give delight when they do arrive home.

Such proof is provided in a letter and picture from E. R. Lambert, aboard "H.M.S. Marshal Soult." The photograph he sends is reproduced here as proof of his ability and in his letter he says—

"This model was made during my spare time on 'H.M.S. Resolution,' whilst on patrol off the north coast of Spain.

"Hours of dullness for others meant hours of enjoyment, not only for me, because this is one of four made in the 'Resolution' during the past six months. I myself bought the material for another two houses for other people, from your New Oxford Street branch. Although the 'Resolution'

At the base cut away the slot (r) as indicated through which a suitable sized strip of card can be pushed. This shield when finished should slip nicely in under the block (c). A further small section of card cut as E will be required on top at (A) to perfectly stop the light.

The Lamp

All is now complete. With a 60-watt lamp there is little tendency for the lamp-house to get hot, but with 100 watts it can become rather warm if run for some considerable time. This heating can be prevented however by cutting two rectangular openings $1\frac{1}{2}$ ins. by 1in. above the lamp and fitting an extra shield (i) on top.

No soldering is required, all that is necessary is to cut the rectangle on two sides only at first by alternate scoring on the inside and filing on the outside, cutting down the middle the two halves will turn up as flaps along the top of which can be cut several tabs.

Corresponding holes are then punched in the new cover (i) the tabs going through and being bent over as per the standard practice in tin toys.

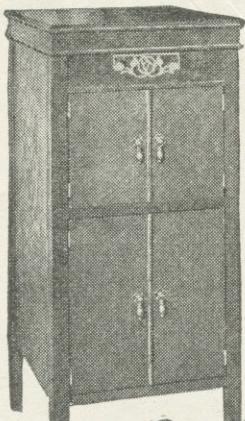
To Operate

To operate the reflectoscope, cut several slips of card about 4ins. long and 2ins. wide that will slip under the slot in the shield (z). Focus up sharply by raising or lowering the lens tube and then replacing the shield lay subsequent coins, or whatever it is, on the end of the other strip of card and change by merely pulling one card out and inserting the other.

Slight alterations of focus may be necessary when the object has any "depth" as say a watch. Should small non-rigid objects such as stamps and small photographs tend to curl slightly with the heat while being viewed, this can be overcome by laying a small square of glass on top of them before inserting.

is once again patrolling the Spanish coast at least two of her ship's company are passing, pleasant and instructive evenings thanks to 'Hobbies' in producing such attractive and interesting models. For all concerned I wish you every success, hoping at all times to belong to the 'Hobby Gang.' "





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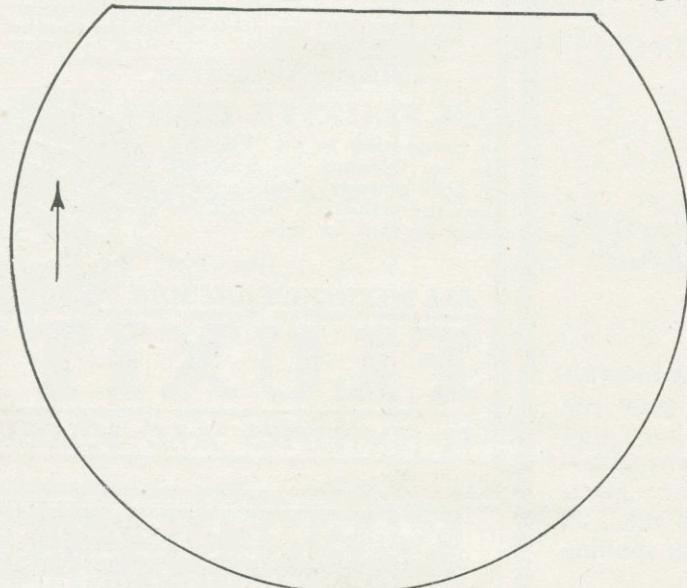
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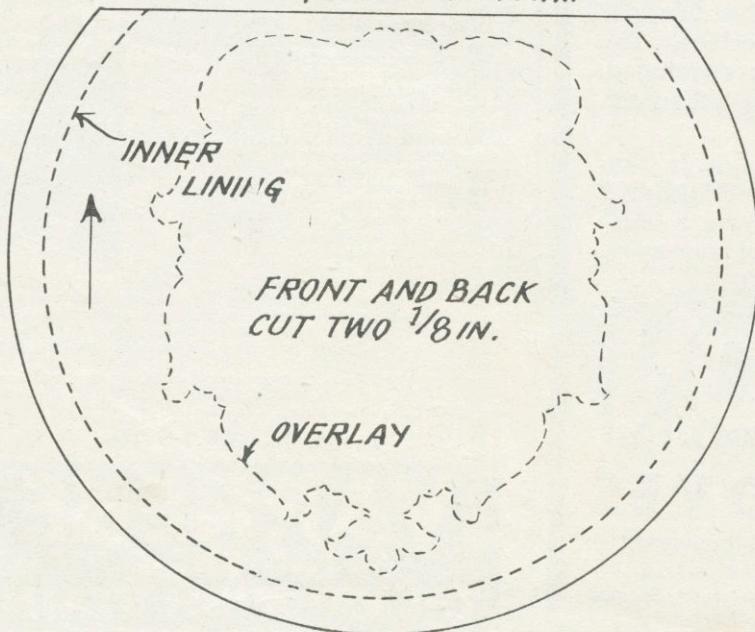
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TO LENGTH GIVEN
AND BEND ROUND
AND GLUE TO
INNER LININGS

KNOB
No. 15

LID, PIECE H
CUT ONE $\frac{3}{16}$ IN.

BASE, PIECE D

CUT TWO $\frac{3}{16}$ IN.

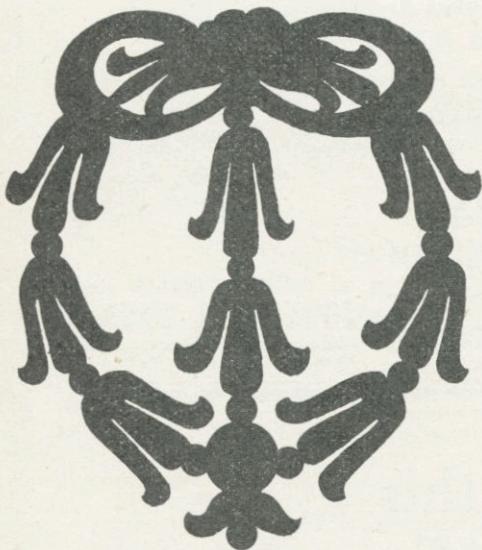
BASE, PIECE C,
CUT ONE $\frac{3}{16}$ IN.
AND SHAPE TO
SECTION

SECTION.

and handy AL BOX

nstruction are given on page 459

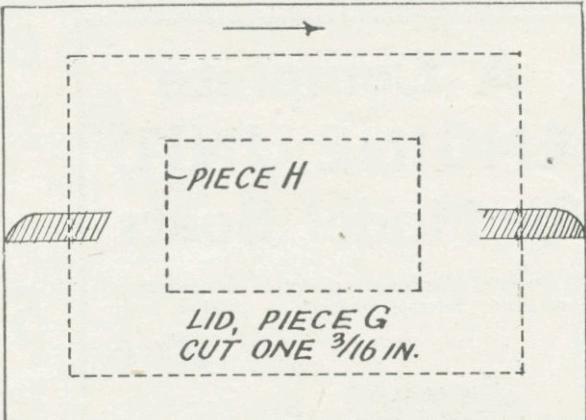
DESIGN No. SD.II



OVERLAY
CUT TWO TOGETHER $\frac{1}{16}$ IN.

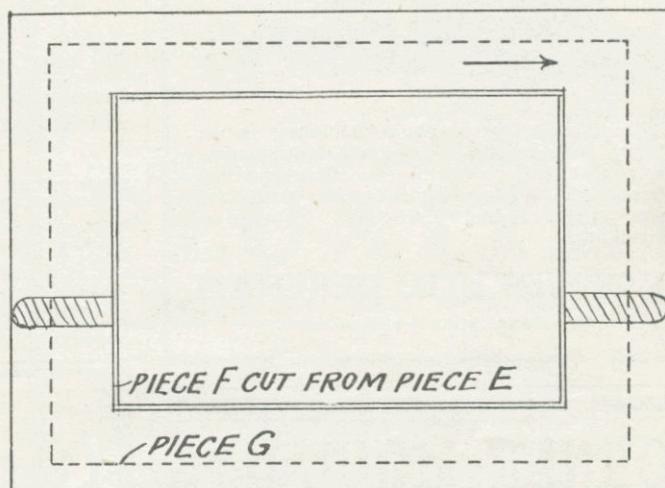
BASE, PIECE B,
CUT ONE $\frac{3}{8}$ IN.
AND SHAPE TO
SECTION

SECTION



PIECE H

LID, PIECE G
CUT ONE $\frac{3}{16}$ IN.

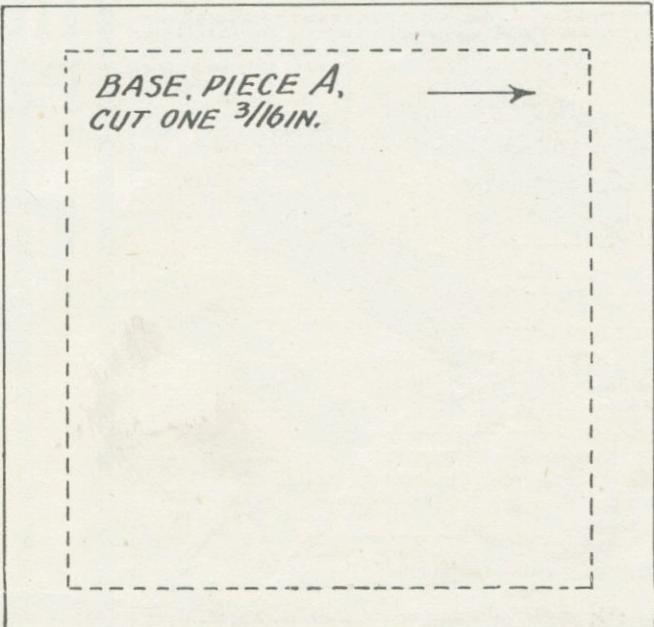


PIECE F CUT FROM PIECE E

PIECE G

LID FRAME E, CUT ONE $\frac{3}{16}$ IN. SHAPE EDGES.

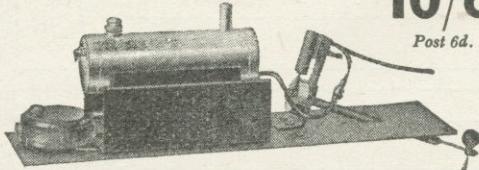
BASE, PIECE A,
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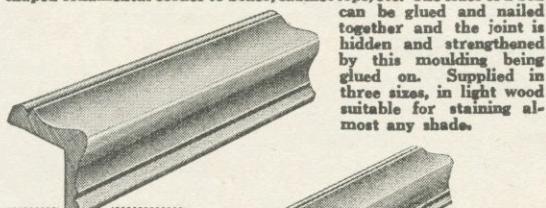
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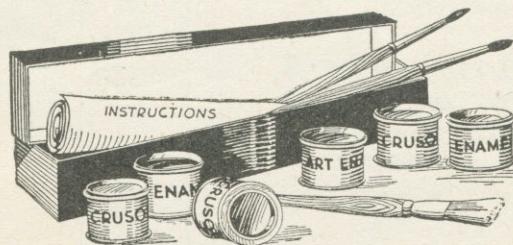
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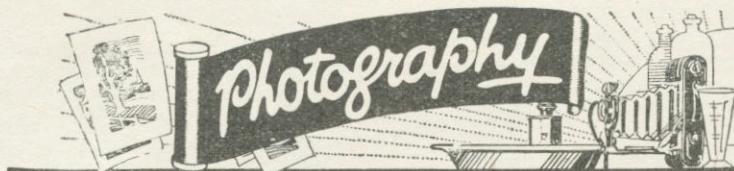
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FLASHLIGHT PICTURES

(Continued)

IN all photography where figures are included the best results are those where the individuals have assumed a natural position and there is no suggestion that they have been 'posed.' With indoor photographs this is perhaps rather easier for the photographer to accomplish because he can take his time and wait till the person is in a comfortable state.

To illustrate what is meant by this, let us imagine we are going to take a couple playing a game of Chess. You will see the table at which they are playing is situated at the correct distance from the camera and you have got the powder all ready. Ask your friends to get busy and to be actually playing their game to get the chessmen into something like correct positions.

Natural Groups

Be sure to insist on them concentrating their attention on their part of the work and in no circumstances can you allow them to be interested in what you are doing. In a few minutes you will find that A has managed to give B an awkward problem and is perhaps smiling about it, whereas B is looking rather worried.

While they are holding these expressions, turn the light down and discharge the flashpowder. Shut the lens and remember to change the film ready for the next exposure.

If you are taking a person reading a paper, watch the opportunity when the face indicates real interest in what is being read. Or if you are taking kiddies do not be in a hurry and remember it is useless to try to make very young children assume a pose. It may take a long time before they will get themselves into a natural position and right for the shot, but the time is not wasted.

Patience with Children

It is so easy to get snapshots that are only 'snaps' whereas a few minutes patient waiting might give you a real picture of which you can be proud. Young children can be frightened with flashlights, but if you persuade them you are only letting off some fireworks and accustom them to the flash by letting off a few grains beforehand, you will find that they will rather enjoy the experience.

When taking a single portrait it is necessary to give a little thought to the background. It is so easy to spoil a nice result by having included in the picture some ornament or piece of furniture or even a floral design from the wallpaper which, because it attracts the eye so much when examining the result, simply spoils the whole effect.

So before you make the flash just stand at the camera and look beyond the person whom you are

taking and make sure there is nothing else coming into the picture. If the wallpaper is such that you cannot avoid it, then hang a piece of plain material on the wall to cover that portion, a blanket is excellent for this job. If you use either brown or white paper for the purpose, watch that no creases are formed for these can be very obtrusive at times.

Soft Lighting

If you desire a soft lighting effect, for instance on the side of the face of your friend—hang a white sheet or muslin at the side of him and fire the flash so the light is reflected from the sheet on to that portion of the face.

Screens for this purpose are easily made by binding white muslin or paper over a child's hoop, and two or three of these will help you to get some very fine and clever effects.

Photographing Models

Those of you who have other hobbies such as fretwork, boat-building, aeroplane models or any similar constructive work will find it is very useful to take photographs of the model in the course of its construction from time to time.

There is no easier way to do this than by the means of flashlight. The model can be arranged on your work bench or table but while you may only want the photo as a record, there is no reason why you should not take it in as pictorial manner as is possible. Therefore clear every other thing from the table or bench and if you have a nice piece of black velvet or cloth hang it in the background to cut out the wallpaper. Black velvet is a non-reflecting material and therefore overcomes all shadow difficulties.

It is better to over-expose slightly, rather than to give too little exposure when taking flashlight portraits. So keep to the tables which are supplied with the powder and you will not be very far wrong.

Table-Top Photography

Whilst on the subject of models we must say a few words about Table-Top photography. This has been a very popular study with a large number of amateurs during the last few years and it is one which is to be recommended for it does give the opportunity for originality.

A start can be made with the following equipment—a piece of three ply about 4ft. by 3ft., some sheets of white paper, a box of crayons or pastels, a piece of mirror, some plasticine, sand and cotton wool.

With these you can produce desert or arctic scenes and with the addition of a few selected

dolls, you can add figures to the scene. The mirror is for the water, cotton wool for the snow, and for the distant scenery you will if you have a little ability in the direction of art, be able to draw with the crayon a few trees or mountains on one of the sheets of paper fastened to the three-ply board for a background.

Simple Scenes

Plasticine animals come out very well, but it is necessary to do the models carefully. Some excellent little scenes can be prepared for Christmas cards, using the carols as your theme; Shepherds with their Sheep; King Wenceslas and the Page, Father Christmas can be illustrated in many happy and cheerful poses.

In concluding this series of articles on flashlight photography it is advisable to give a warning note

on the question of the development of the negatives.

We have already hinted that correct exposure is necessary if you wish to get first-class results and this is easy if you will watch the tables given with the powder. Correct development is just as simple. You require a developer that will give 'soft' results with plenty of detail and gradation and for this you cannot use anything better than those of the type of Azol, Vedol or Rytol.

Each of these tables showing the time to allow the film to remain in the solution to be correctly developed. For printing we would advise you to use bromide paper and either Amidol or Metol-Quinol or even Azol again, but if you adopt the latter remember to give the paper full exposure so as not to force development.

JUNIOR FRETWORK COMPETITION RESULT

THE Junior Section of the Annual Fretwork Competition was not, we are afraid, up to the usual standard, and although it was numerically strong and there were some outstanding examples of fretwork, the general cutting and finish was not so good as we should like to have seen it.

Let us remark on some outstanding points so those who go in for Competitions in future may not fall into the same error.

In general, there seemed to be carelessness in finishing, where stains or paint were added to finish the article they had been put on too thickly, or too unevenly, some looked as though the paint had been applied with a tar brush.

Colour schemes, too, are all very well, but they should be artistic. Red, white and blue may be patriotic in connection with a design such as this, but it is hardly in keeping to add the colours in unsightly blobs all over the work.

Moreover, why paint or stain just the front and leave the edges and the interior frets plain? Study the effect of the colouring or the staining before you actually complete the work.

Colour Schemes

In this instance, whitewood was used with oak square ornaments. The best plan was to colour the whole with medium oak stain, thus bringing the surface of all the parts down to a standard brown.

The oak ornaments, too, were in nine cases out of ten, added without any attention. Where these are cut across the grain, the surface of the wood is naturally rougher. Surely, therefore, they should be given a rubbing of glasspaper carefully to flatten the surface of these parts.

Lack of attention certainly robbed a great many competitors of numerous points. A Competition piece needs care in the cutting, in the fitting, in the finishing. Glue the overlays on so they do not fall off. Keep them true and central. If you propose adding a back of linen cloth, do it

neatly and do not glue it so the rough edges hang away round the sides. One entry looked as though it had been glued down to a piece of blue rag. The edges had not been cut to the outline of the work at all. Another worker had added the backing cloth in little strips and pieces, so when you looked behind it was a maze of odd pieces of blue glued on.

Neatness always counts, and too much time cannot be spent on this.

Other points were lost, too, by not keeping the saw upright. It spoils the look of the thing altogether to have the edge of the work sloping in various directions instead of being cut at right-angles to the back and front.

An Electrical Model

There was, however, one outstanding piece for ingenuity, and here the worker had added his electrical knowledge to his enthusiasm for fretwork. On each side of the figure feature were added two tiny brackets, and on them fitted a small electric bulb complete with hand-made shade. The wiring was taken through the back and led away to a battery contained in a box which was surmounted by the Royal crest and a switch.

The whole thing was very effective when lighted up from its remote control. A special prize was awarded this ingenious worker.

We hope these remarks will help workers to improve their cutting before entering further contests. Neatness, thought and craftsmanship must all be put into the work to make it worth while sending along.

Prizewinners

The list of principal prizewinners is as follows.
1st. M. Childs, Beaminster, Dorset; 2nd. Douglas G. Finch, Welling, Kent; 3rd. John W. Urquhart, Sellafirth, Shetland; 4th E. Graham, Redruth, Cornwall; a special prize was awarded G. Bentall, New North Road, Barkingside, Essex, and a number of Consolation Prizes also sent.

STAIRCASE FOR A DOLL'S HOUSE

HERE are, without doubt, a number of readers and workers who are busily engaged upon the Modern Doll's House design published in our issue of Jan. 15th.

This design—No. 2204—has three rooms and a hall on the ground floor, and three bedrooms and a landing on the first floor.

On account of lack of space on the design sheet, we were unable to give details of the staircase. But as many workers will like to have their house fitted up properly, we give details here.

The hall measures $7\frac{3}{4}$ ins. long by $4\frac{1}{2}$ ins. wide, and our staircase leads up on the right hand side of this to a landing of the same size. On the design sheet the floor of the landing is shown as piece F, number 15, and it will be observed that a note is included to the effect that this floor must be cut to the dotted lines if a staircase is to be fitted.

The front portion of the landing will only therefore be required and this will be securely fitted in the house and the staircase built round it.

A Modern Type

Such a modern type of house as this deserves only a modern staircase, so we have arranged for solid balustrading instead of the open type with separate balusters.

The sketch (Fig. 1) gives an idea of the finished staircase, the end wall of the house being removed to show its construction.

There are ten stairs up to the landing, which stretches the full width

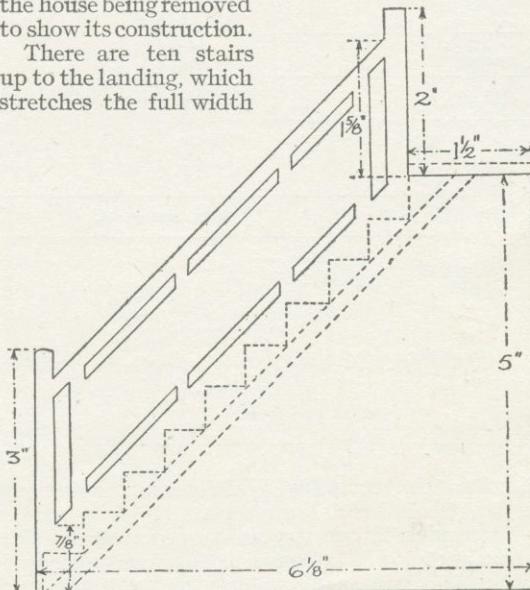


Fig. 2—Dimensions and shape of the side piece

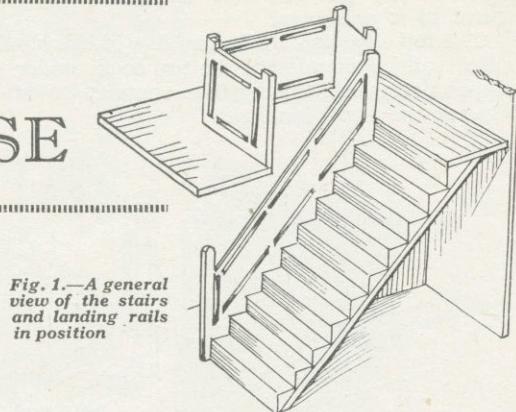


Fig. 1.—A general view of the stairs and landing rails in position

of the hall and then three more stairs from this landing to the main floor upstairs.

The Stairs

Commence work by drawing out and cutting the main side shown in Fig. 2. This should be of $3/16$ in. plywood nicely cut and cleaned up with fine glasspaper.

To this must be glued and nailed a backing piece for the steps themselves, and this piece, measuring $7\frac{3}{4}$ ins. by $2\frac{1}{8}$ ins. is shown by dotted lines in Fig. 2 with the steps fixed to it the steps consisting of $\frac{1}{2}$ in. triangular fillet. Some blocking pieces glued in the angle beneath the stairs will strengthen the whole thing until it is fixed permanently in the house.

Short Landing

The small landing is shown in Fig. 3, and it is glued to the flat top of the main side shown in Fig. 2, and later on pinned through to the back wall of the house.

The next piece to cut and fix will be the short handrail shown in Fig. 4. Draw this piece out carefully and after cleaning up, glue it to the top of the main side. The dotted lines shown on the piece indicate where it should go.

Two Steps up

To this again is fixed the remaining two steps, these being glued to a small backing piece shown in Fig. 5. The sloping piece measures 2 ins. by

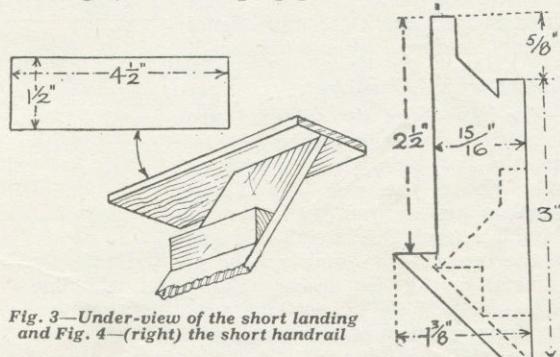


Fig. 3—Under-view of the short landing and Fig. 4—(right) the short handrail

17ins. wide, and the two triangular steps are glued to it as shown.

The top edge and the lower edge of this sloping piece will be chamfered, the top to fit under the upper floor, and the bottom chamfer to fit up against the small landing.

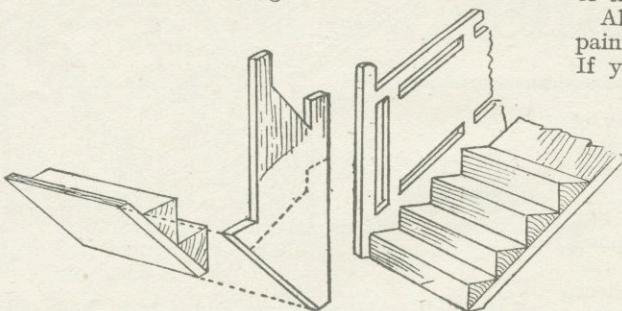


Fig. 5—Back view of stairs

Fig. 6—The steps in place

The little detail (Fig. 6) shows how the triangular fillet pieces are glued to the back board.

The main part of the staircase is now complete, and it only requires the handrail panelling to finish off round the "well hole." At Fig. 7 is shown the length of panelling which runs parallel to the stairs and is glued to the edge of the landing floor and to the post at the end of

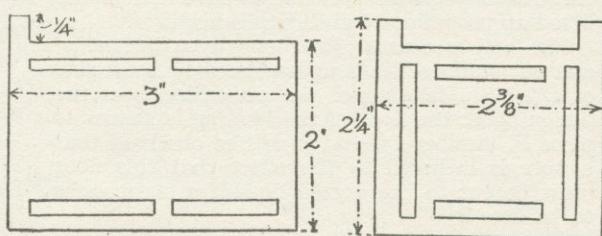
the short flight of steps. It can be clearly seen in the sketch Fig. 1.

The shorter end piece of panelling finishing the enclosure is shown in Fig. 8. This is glued to the other length of panelling and to the end wall of the house.

All the woodwork can be either stained or painted to suit the individual taste of the maker. If you desire to have a little more substantial newel posts than those given here, glue on extra thickness each side of the present ones and so make them square in section.

WOOD REQUIRED

- 1 panel of 3/16in. plywood 12ins. by 9ins.
- 2 pieces of triangular fillet 15ins. long.



Figs. 7 and 8—The two pieces of the landing rails

OO Gauge Model—(Continued from opposite page)

dummy, though fitted with a pulley which takes the chain.

The various brake wheels are obtainable from Merco, and are very tiny, exactly to scale for the purpose. They can be soldered to common lengthy pins in the manner shown in Fig. 1 (G). The pin is pushed through the hole in the wheel and through a piece of cardboard, is arranged to project at exactly a true angle, and the wheel touched with spirits and solder.

When this has been slotted through the holes in the body, the wheel is attached to the other end by using two pieces of cardboard, one on either side of the pin, so that the wheel is perfectly true. The short ladders are OO-Gauge signal ladders, soldered on and trimmed.

The Buffers and Couplings

The buffers are also soldered into holes drilled in the buffer beams, exactly in place, their centres 14 mm. above the rail. If Lanal couplers are desired, the loco type should be used, these being soldered to the beam. The hook can be pivoted to a pin soldered to the two floors. For jacks, use some bogie blocks of the largest size, sweating these on the four corners of the crane wheel-frames, as shown in Fig. 1 (F) and (H).

The model may be painted either art metal

black, with a very dull polish, or wagon grey or brown. The dummy boiler was given a coat of aluminium, and the brass pipes were varnished to prevent tarnishing.

The model forms a most effective feature of any complete layout, and if readers are interested, the writer will be glad in a subsequent article to

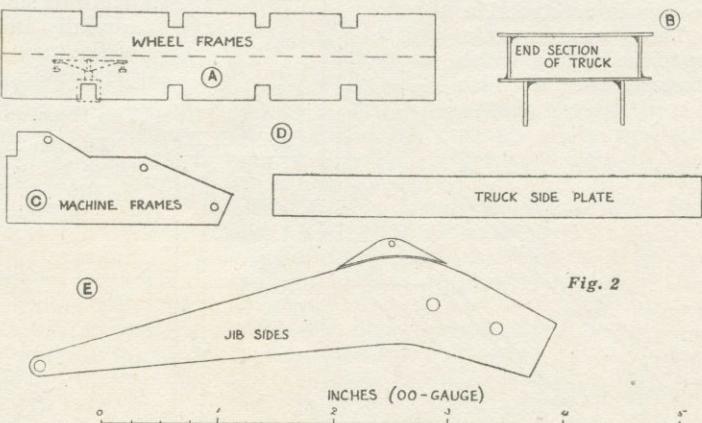


Fig. 2

describe the remaining vehicles and equipment for the whole breakdown train.

These include two low-sided open wagons with tarpaulined loads, a converted 6-wheel passenger coach for a workmen's vehicle, and a brake van with six wheels.



Model Railway Accessories



LAST week we gave details for making the general framework and left off where we were dealing with the actual jib portion. Back copies can be obtained if you want them.

The work of building up the jib was done on the piece of stripwood, which should be of $\frac{1}{2}$ in. by $\frac{1}{2}$ in. section, and the cross-pieces were soldered on in the manner shown in Fig. 1 (B), being afterwards trimmed clean. In (A) is shown the method of forming metal girder-work generally, this time the card strip is laid flat.

A hole was then drilled in the two floors of the crane itself to receive the pivot of the crane. This hole happened to be $\frac{1}{4}$ in. in diameter, a small screw-bolt and nut of that size being employed. But much will depend upon the size of the hole in the cog-wheel.

For this wheel the writer used a discarded cog out of an alarm-clock, which should be about $1\frac{1}{2}$ ins. in diameter, so as slightly to protrude over the edges of the floor. The cog-wheel should be soldered to the top floor of the vehicle.

Next the frame of the crane was cut from the same material as the floors. The exact size of these pieces can be ascertained from Fig. 2 (C), while other sizes for other parts are also given in (D) and (F).

For the base of the crane-frames a piece of thin brass or of thicker tinplate can be used. Take care to drill all the holes in these frames before building up the latter, as it is difficult to do this later. The various gears are all taken from the same clock, with the exception of one, which came from a disused electric loco motor.

Dummy Cylinders

The cylinders are, of course, dummies, and were bought as components for a very nominal figure, complete with slide-bars and crossheads and connecting rods. The ends of the latter were simply soldered on to washers which represent block wheels; it would be impossible to have such a small model working.

The cylinders had the steam chests filed off and were then soldered on the frames; they are made from white metal and solder readily. The dummy boiler was of stripwood—the only wood in the model.

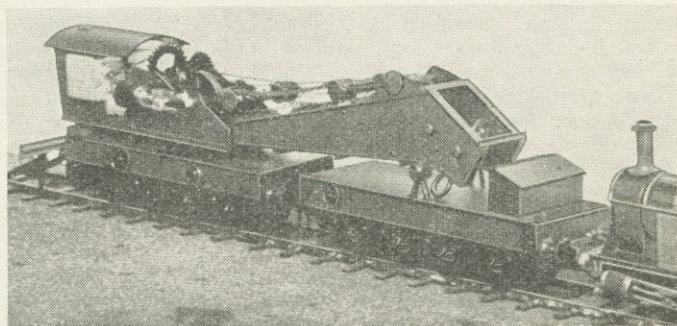
On the front of it were fixed various brass wires to suggest piping, and a dummy firebox door was made from cardboard glued on. The rounded

roof is of tinplate, soldered on to the rear uprights and the front wire posts. The pulleys are O-Gauge signal pulleys.

The most difficult part of the work was the building up of the pulley bearers. These are only of tinplate strip, but the pulleys are soldered to give stability to the chain device, and the bearers are also soldered so as not to swing, the

BREAKDOWN CRANE IN OO GAUGE

(CONTINUED FROM LAST WEEK)



exact position being taken by allowing the jib to rest on the crutch on the match-truck.

This is most important, as it determines the entire question of the free running and swivelling of the jib when the vehicle takes a curve. The jib must be capable of resting its full weight on the crutch at all times.

The chains themselves were made of 20-link-to-the-inch model ships' chain and they were first arranged in place and then tacked to the pulleys with solder to keep them correct. This avoids the tedious trouble of displacement of the chains every time the crane is lifted or if it is derailed.

The crutch can be made in the manner shown in Fig. 1 (D) very simply. Here, there is employed for the purpose, part of a white metal toy wheel taken from a broken Britain's farm toy.

All the spokes were cut off about the hub except the three required. The hub was filed clean and the three remaining spokes, after they had been evened up, were soldered to the floor of the match-truck, exactly where required, a piece of suitable wire being fixed for the bearer. The hook is a

(Continued on opposite page)

The EDITOR'S NOTES



In connection with the Staines Scouts, a very interesting Fair and Jamboree was held recently and a large number of people enjoyed the displays loaned by the Canadian and other Governments, the Port of London Authority, etc. Our own interest was in the fretwork and wood-work displays, in which a special Hobbies prize was won by William Angus, of the Ashford Residential School. The entry was our Mystery Money Box and as Scout Angus has only been fretworking six months, the result does him great credit. He is naturally keenly interested in wood-work and is now undertaking a Mystery Cigarette Box.

* * *

THE suggestion is made in Wigan, I see, for the formation of a Galleon Builders' League, because of the interest and enthusiasm for this particular type of model. There are certainly enough people to form such a League, I know, and a wonderful exhibition could be staged in any town of the Galleons made from the Hobbies Designs. Some very fine specimens have been turned out everywhere, and many very acceptable gifts have been made. The completed galleons are, of course, of no practical use, but they form a very striking piece of work for the sideboard or side-table.

* * *

THREE has been very sore trouble for me, I can tell you, because I dropped the "Contents" panel on this page. Its usefulness was very obvious, and I am sorry at the inconvenience its disappearance has caused. Anyhow it shall appear again next week, so in future you will be able to see at a glance the variety of good things which each issue holds.

* * *

BECAUSE there are many at school and at home interested in lathe work, I am having shortly a little series of articles on the subject. Most manual centres and many amateur handymen have one of the Hobbies Lathes and with it should be able to turn out a number of practical everyday articles. It is a fascinating hobby and the worker gets a great deal of enjoyment out of it.

ALITTLE time ago a reader suggested the use of our popular home cinema for magic lantern slides. Since then we have had details how to make a magic lantern itself and I know a very large number have been made because of the requests for lens. Now a lady reader, Mrs. F. J. Southern of Coventry, sends a helpful method of making slides for either of these articles. A strip of card has circular holes cut out the size of the aperture and cellophane from cigarette or chocolate boxes is pasted over. With a mapping pen the outline of the simple picture can be drawn on it and the colours afterwards added between. The process is quite simple, and our friend suggests it is also a method for colouring ordinary films in the same way.

* * *

IMUST congratulate Master Kenneth Harrison of Lilac Avenue, York for carrying off 1st Prize for his school with a little lecture. Of course, his subject was "Fretwork," and the books and details I was able to loan to him had been of assistance in its preparation. The Master remarked that it was the best schoolboy lecture he had ever heard. Splendid, Kenneth!

* * *

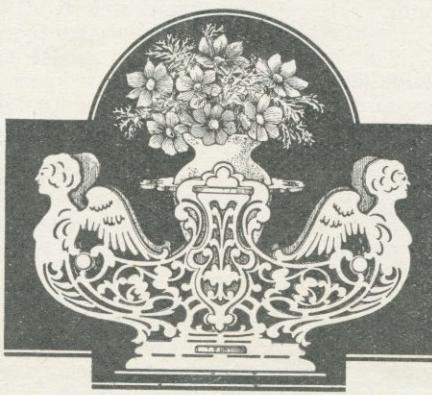
EDINBURGH is the latest place to have a Hobbies Club formed and the official opening was performed recently by Sir William W. M'Kechnie. The Club premises are at 33, Lauriston Place, and membership is now over 70. The fellows have already proved themselves handymen, because the painting of the place and the fitting of the electric light were undertaken by some of the members. The hobbies enjoyed include fretwork, woodwork, photography, model railways, model aeroplanes, wireless, etc. I have no doubt many of our readers in Edinburgh will like to go along and find out further particulars.

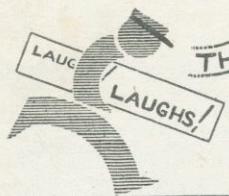
* * *

LOOK out for some more jolly good things next week, in addition to the Vase Holder Design illustrated here. There will be another popular Chemistry article, special notes for Aircraft model makers, as well as details for making a simple Dart Set

The Editor

A VASE STAND design free next week





THE FUN AND PUZZLE PAGE



NO CHANCE

"In my last place," said the new parlourmaid to the cook, "I always managed to take things fairly easy." The cook closed one eye and held her finger to her nose, "You'll find it different here," she said. "They keep everything locked up."

AN OPTIMIST

A cyclist approached a small boy who was very solemnly fishing. "How many have you caught?" he asked.

"Well, when I've got another, I shall have one," was the reply.



What did Adam and Eve do when they were expelled from Eden?

They "raised Cain."

Why is a benevolent man like a cart horse?

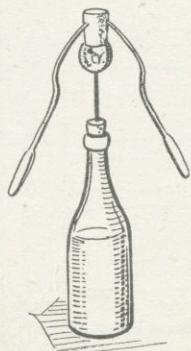
He always stops at the sound of voice.

How many sides has a circle?

Two; the inside and the outside.

BALANCING A PENNY ON A NEEDLE

Take an ordinary knitting-needle and rub it up and down on the kitchen sink for a few times until you have worn the point off; then put this through the cork in a wine-bottle until it protrudes through the top about 4ins. or 5ins., the end which you have flattened to be upwards.



Take a cork, and make a slit in one end; into this slit insert a thick, unworn penny. Then stick into the cork a fork on either side, and place the edge of the penny on the end of the needle, when you will find that it will balance.

A BRAIN TWISTER

To solve this test of reasoning power you must first make the assumption that black men *always* lie, and white men *always* tell the truth. At twilight you are rowing towards a shore, on which you see, very indistinctly, three men. You shout to them: "Are you white or black?" A man answers, but his words are blown away in the wind. A second man cries: "He says he's white, and he is white, and so am I." The third man cries: "He's black, but I am white." What is the colour of each of the three men?

The answer is in Col. 3.

SUNDAY BEST

The vicarage children were saying their prayers one Saturday night and mother asked little Jane to choose a hymn, and she chose "Ere our Sabbath close."

"But that is a hymn for Sunday," said mother. "No!" said Jane, "We air our Sunday clothes on Saturday."

TALENT

A certain R.A. one day paused in the street, attracted by some work of a pavement artist rather above the average.

In a kindly manner, he said "Have you ever learned drawing?"

"Lor' lumme, guv'nor, I carn't learn yer; yer 'as to 'ave a gift fer this!"



What part of a locomotive train requires the most careful attention?

The tender part.

What is the difference between forms and ceremonies?

You sit upon forms and stand upon ceremonies.

Why do children object to the absence of Santa Claus?

(presents). Because they prefer his presence.

Why is a dog's tail a great novelty?

No one ever saw it before.

* * *

Have you heard the Eskimo's song? "Freeze a jolly good fellow."

What is most like a horse's shoe?

A mare's.

What shape is a kiss?

Elliptical (a lip tickle).

A MATCH TRICK

Here is a fascinating little match trick anyone can do.

Arrange twelve matches upon the table to form four complete squares shown here. Four matches have to be so rearranged as to form exactly three squares, each the same size as the original four squares.

The solution is shown at the foot of this column, but have a good try at it first.

* * *

Why is a chicken crossing a road like a burglary?

It is a foul proceeding.

GOOD IDEA

Teacher—"I won't have you children eating in class. Tommy Jones, what are you eating?"

Tommy—"I'm not eating, miss, I'm soaking a prune for afterwards"

EXPLANATION

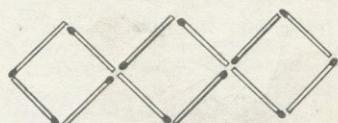
"No, sir," said the defendant, "I was certainly not drunk though I may have been intoxicated."

"Well," said the magistrate, "I intended to fine you ten shillings but in view of your explanation I will make it half a sovereign."

ANSWER TO BRAIN TWISTER

If the first man was black, he would have lied and answered "I'm white." If he was white, he would have said so. In either case, the words blown away by the wind were "I'm white," so the second man is white, because he told the truth about what the first man said. Since the first two men are both white, the third man, obviously, is black.

Here is how the Match Trick can be solved by an easy rearrangement.



MISCELLANEOUS ADVERTISEMENTS

The advertisements are inserted at the rate of 2d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Order and Stamps must accompany the order. They will be inserted in the earliest issue. To sell anything except fretwork goods or those shown in Hobbies Handbook. Orders can be sent either to Hobbies Weekly, Advertisement Dept. 80/32 Ludgate Hill, London, E.C.4, or Dereham, Norfolk.

READ the "Stamp Collectors Fortnightly." Editor Fred. J. Melville, for lively articles and latest news, 5/- annually or 2d. fortnightly from your newsagent Specimen from "S.C.F." 44 Bedford Row, W.C.1.

GLUE. Hobbies glue is as good as 25 years' experience can make it. Sticks wood, china, leather, etc. In tubes 6d. and 2d.—Hobbies Ltd., Dereham.

LONELY? Then write Secy., U.C.C., 16BB, Cambridge Street, London, S.W.1. Genuine. Established 1905.

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INVENTIONS PROTECTED. Booklets gratis.—Reginald W. Barker & Co., Patent Agents, 56 Ludgate Hill, E.C.4.

LATHE AND FRETSAW 95/- carriage forward. Treadle-driven and just the thing for the home handyman. Write for details.—Hobbies Ltd., Dereham.

FREE. New issue packet of 25, including set of 5 New Greece Classic issue of Nov., 1937, perforation gauge and watermark detector. Also to every tenth boy applying, a Free Brit. Col., cat. 5/- in addition to the above. All you have to do is to send for my splendid ALL PICTORIAL approvals at ½d. and 1d. each. Every stamp a picture stamp.—Court, 76 Willowdale Road, Liverpool, 9.

THE WORLD'S MOST POPULAR FRETTWORK SET—Hobbies A1, price 10/6; post 9d. Other sets from 1/6 to 21/. Send for list.—Hobbies Ltd., Dereham.

100 STAMPS all different, free to approval applicants sending 2d. postage.—Errington Macquire (O), 51 Atkins Road, London, S.W.12.

POLISH OUTFIT 2/3; post 6d. Comprises three kinds of stain crystals, woodfiller, cotton-wool rubber, bottle of Hobbies "Lightning" polish, glasspaper and instructions.—Hobbies Ltd., Dereham.

STAMP Approvals ¼d. upwards; half catalogue price —Vectis Stamp Supply, Binstead, I.O.W.

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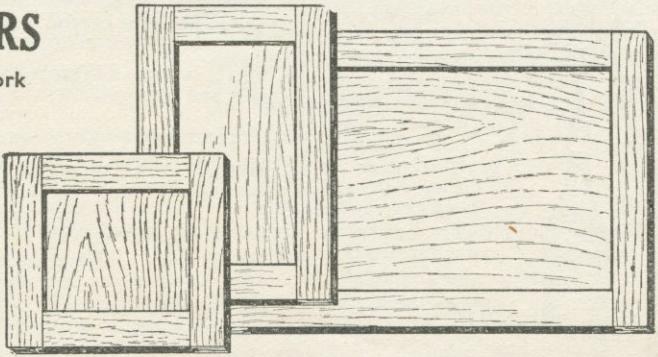
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STAMP COLLECTION CORNER

TWO stamps in the collection bring to mind great contrasts in exploration. The one shown first is the 1894 issue of Portugal, the five reis value. It was issued to commemorate the 500th anniversary of the birth of Prince Henry the Navigator.

There were three designs in the issue of fifteen stamps. The first is that shown, the second has a picture of Prince Henry standing on the promontory of Sagres directing the route that Marco and his ships should take, while on either side of this there is an elephant which indicates the direction to which exploration tended—towards India for the spices and so on which were found there.

The third illustration shows Prince Henry sitting in an arm chair with his arms outspread, the left arm resting on a globe and the other resting on an armillary sphere, while on his lap there is a chart.

An armillary sphere is best described as a series of circles joined to make a sphere, each circle representing one of the great circles of the earth, such as the Equator, the Arctic circle and so on. At the bottom of the stamp the word "Sagres" appears.

Prince Henry first distinguished himself at the siege of Ceuta in 1415. That was not far from home, being in North Africa, just south of Gibraltar.

Actually, Prince Henry never went far from home, despite the fact that he was called the Navigator—a term which would surely lead one to believe that he was a great traveller. The reason he earned this name for himself was that he encouraged others, and so furthered navigation. To Prince Henry came all those who were connected with the sea; pilots who looked for instruction in their craft; boat builders who wanted help, and others who came to recount their adventures in strange parts and so instruct Prince Henry.

Henry's brother Pedro had travelled all over Europe and he for one consulted his brother concerning his exploits. The outcome between boat builders and Prince Henry was the caravel boats which figure so largely on the stamps of Spain and Portugal.

Exploration proceeded apace. Before his death a collection of merchants met at Lagos, and formed a company to promote African exploration.

Lagos will be found at the



Prince Henry, the Navigator

Prince Henry, born in 1394 was the son of John I of Portugal, and Philippa, daughter of John of Gaunt. He died in 1460.

In those days there was very little interest in exploration as a means of learning. It was only for what could be got as a result of the newly found market, which generally meant that goods of great value were obtained from the natives in exchange for articles which were of very little value to the traders.

The Southern Cross

extreme south of Portugal, it is not the stamp-issuing country of previous days, and which now uses the stamps of Nigeria. Close to Lagos will be found Sagres, the name mentioned on the stamp.

As mentioned before, one of the early reasons for exploration was the exploitation of the native. Unfortunately, it must be mentioned, the merchants of Lagos were not blameless in this respect, for they traded in slaves. Black men were very fashionable as

EXPLORERS — ANCIENT & MODERN

servants in Portugal then.

The contrast to this early exploration is furnished by the second stamp, showing the late Kingsford-Smith's aeroplane 'The Southern Cross.' One is apt to forget that the air has to be explored just as much as the ocean, for air-currents and storm centres need to be known just as the trade routes on the sea.

The Southern Cross is as well known as the Golden Hind, the Endeavour, or the Discovery.

The full story of this airman's exploits would occupy too much space for inclusion in these notes but a brief summary is worth while. First, he went from San Francisco to Brisbane, and with the Pacific conquered, he tried to get to England from Australia.

For ten days there was no news of him, and it was feared that he was lost, but on the eleventh day he was found. He had come down far away from anyone and his wireless had failed. One would have thought that this escape from lingering death would have kept him from making another attempt. But no, he again tried and this time he was successful, accomplishing the journey in some twelve days, fourteen hours.

That was a journey which would have taken those of whom we spoke earlier in this article about a year—even if they had ever undertaken it. That was not enough, however, and he hungered for more. The Atlantic had been crossed from west to east, with the trade winds in the favour of the aviator, but Kingsford Smith wanted to go in the reverse direction. So he set out from Dublin and in 31 hours he arrived in Newfoundland. After a rest there he went on to New York and then right across the continent to San Francisco. In other words he had encircled the World in his aeroplane.

Even that was not enough. He wanted to lower his time from Australia to England, so this time he took ten days over the journey.

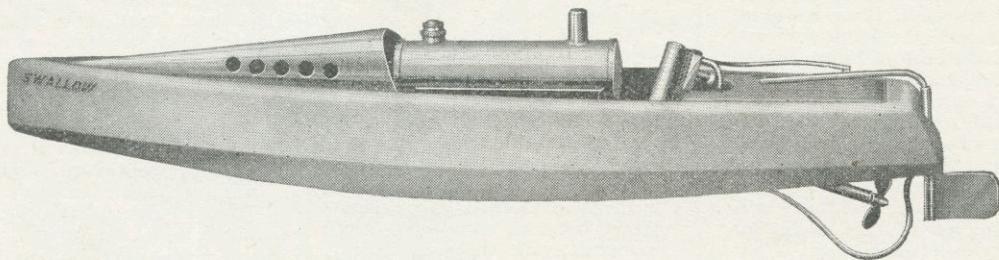
So far as pioneer flights is concerned, the latest flight of the Russians over the North Pole to America stands in comparison with those of Kingsford Smith.

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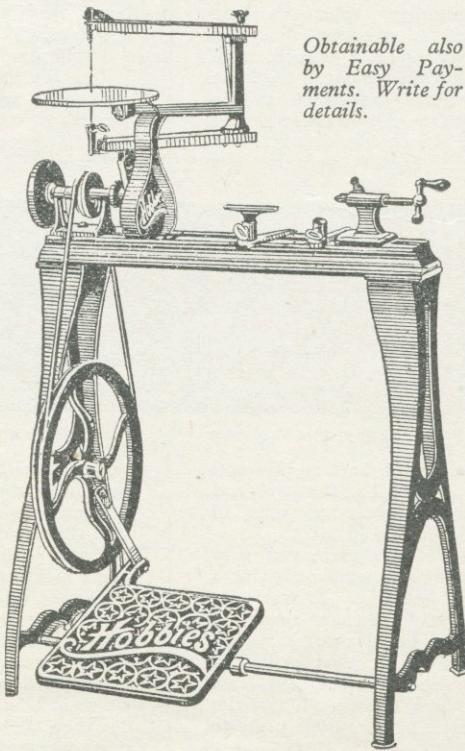
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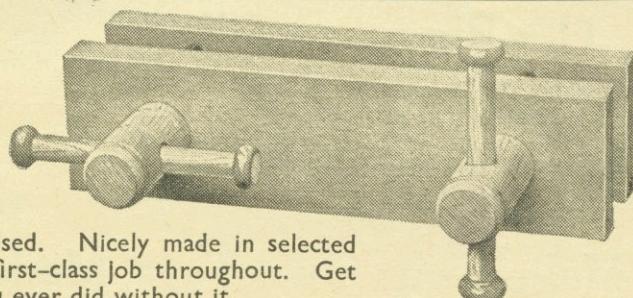
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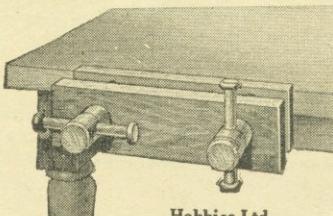
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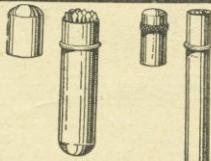
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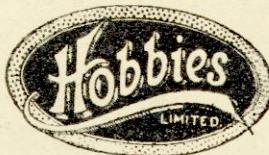
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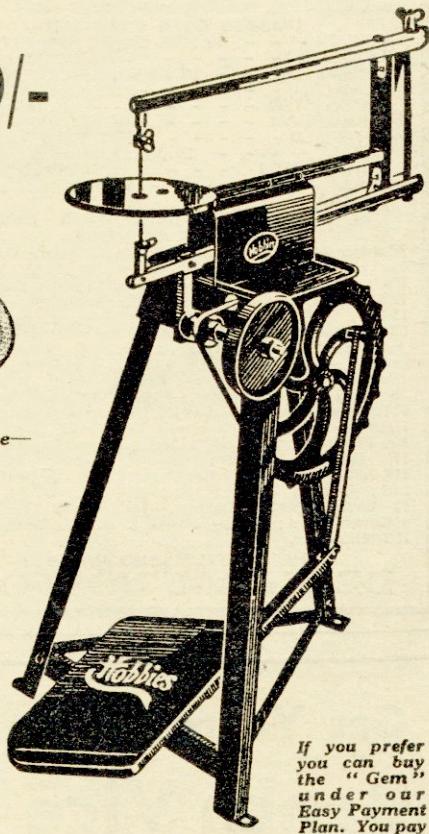
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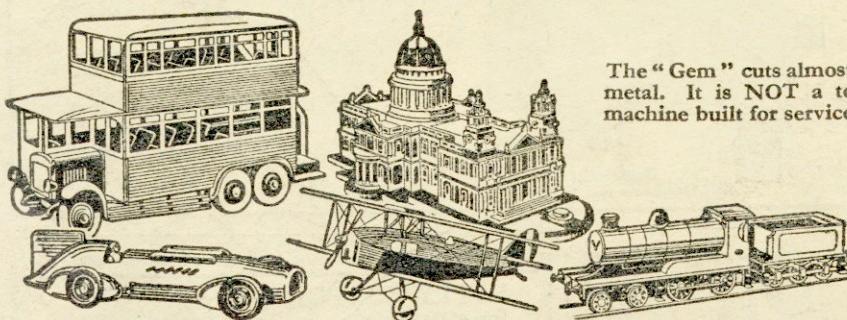


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